## CLAIMS

1. A cruise control system for a vehicle, comprising: a throttle;

a controller that determines an open-loop speed compensation factor, that calculates a closed-loop speed compensation factor, that determines a throttle area based on said open-loop speed compensation factor and said closed-loop speed compensation factor and that operates the throttle based on said throttle area.

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- 2. The cruise control system of claim 1, further comprising a manifold absolute pressure (MAP) sensor that sends a pressure signal to said controller, wherein said controller adjusts said throttle area based on said pressure signal.
- 3. The cruise control system of claim 1, further comprising: a manifold air flow (MAF) sensor that sends a MAF signal to said controller; and

a vehicle speed sensor that sends a vehicle speed signal to said controller, wherein said open-loop speed compensation factor is based on said MAF signal and said vehicle speed signal.

- 4. The cruise control system of claim 1, wherein said closed-loop speed compensation factor is based on an integral term and a proportional term that are calculated by said controller.
- 5. The cruise control system of claim 4, wherein said proportional term is determined based on a proportional coefficient and an error.

- 6. The cruise control system of claim 5, wherein said proportional coefficient is determined from a look-up table based on a vehicle speed signal and a manifold air flow (MAF) signal.
- 7. The cruise control system of claim 5, wherein said error is based on said cruise control mode.
- 8. The cruise control system of claim 7, wherein when said cruise control mode is engaged, said error is a difference between a vehicle speed and a cruise speed.
- 9. The cruise control system of claim 7, wherein when said cruise control mode is one of a group comprising acceleration from engaged and coast, said error is a sum of a speed error and an acceleration error.
- 10. The cruise control system of claim 7, wherein when said cruise control mode is overspeed resume, said error is a difference between a speed error and an acceleration error.
- 11. The cruise control system of claim 7, wherein when said cruise control mode is one of a group comprising acceleration standby enabled and resume, said error is equal to an acceleration error.
- 12. The cruise control system of claim 7, wherein when said cruise control mode is one of a group comprising tap-up and tap-down, said error is equal to a sum of a speed error and a timed acceleration error.

- 13. The cruise control system of claim 1, wherein said controller determines whether an enable is flagged, wherein said closed-loop speed compensation factor is equal to a prior closed-loop speed compensation factor when said enable is not flagged.
- 14. A method of controlling a speed of a vehicle using a cruise control system, comprising:

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and

determining an open-loop speed compensation factor;
calculating a closed-loop speed compensation factor;
determining a throttle area based on said open-loop speed
compensation factor and said closed-loop speed compensation factor;

operating a throttle based on said throttle area.

- 15. The method of claim 14, further comprising adjusting said throttle area based on barometric pressure.
- 16. The method of claim 14, wherein said open-loop speed compensation factor is based on a vehicle speed and a manifold air flow.
- 17. The method of claim 16, wherein said open-loop speed compensation factor is determined from a look-up table.
- 18. The method of claim 14, wherein said closed-loop speed compensation factor is based on an integral term and a proportional term.
- 19. The method of claim 18, wherein said proportional term is determined based on a proportional coefficient and an error.

- 20. The method of claim 19, wherein said proportional coefficient is determined from a look-up table based on a vehicle speed and a manifold air flow.
- 21. The method of claim 19, wherein said error is based on a cruise control mode.
- 22. The method of claim 21, wherein when said cruise control mode is engaged, said error is a difference between a vehicle speed and a cruise speed.
- 23. The method of claim 21, wherein when said cruise control mode is one of a group comprising acceleration from engaged and coast, said error is a sum of a speed error and an acceleration error.
- 24. The method of claim 21, wherein when said cruise control mode is overspeed resume, said error is a difference between a speed error and an acceleration error.
- 25. The method of claim 21, wherein when said cruise control mode is one of a group comprising acceleration standby enabled and resume, said error is equal to an acceleration error.
- 26. The method of claim 21, wherein when said cruise control mode is one of a group comprising tap-up and tap-down, said error is equal to a sum of a speed error and a timed acceleration error.
- 27. The method of claim 14, further comprising determining whether an enable is flagged, wherein said closed-loop speed compensation factor is equal to a prior closed-loop speed compensation factor when said enable is not flagged.

28. A method of controlling a speed of a vehicle using a cruise control system, comprising:

determining an acceleration error and a speed error of said vehicle when operating in a cruise control mode;

5 calculating a closed-loop speed compensation factor based on said acceleration error and said speed error;

determining a throttle area based on said closed-loop speed compensation factor; and

operating a throttle based on said throttle area.

- 29. The method of claim 28, further comprising determining an open-loop speed compensation factor based on a vehicle speed and a manifold air flow, wherein said throttle area is further based on said open-loop speed compensation factor.
- 30. The method of claim 28, further comprising adjusting said throttle area based on barometric pressure.
- 31. The method of claim 29, wherein said open-loop speed compensation factor is determined from a look-up table.
- 32. The method of claim 28, wherein said closed-loop speed compensation factor includes a proportional term and an integral term.
- 33. The method of claim 32, wherein said proportional term is determined based on a proportional coefficient and an error.
- 34. The method of claim 33, wherein said proportional coefficient is determined from a look-up table based on a vehicle speed and a manifold air flow.

- 35. The method of claim 28, wherein said acceleration error is based on said cruise control mode.
- 36. The method of claim 35, wherein when said cruise control mode is engaged, said acceleration error is zero and said speed error is a difference between a vehicle speed and a cruise speed.
- 37. The method of claim 35, wherein when said cruise control mode is one of a group comprising acceleration from engaged, overspeed resume, acceleration from standby enabled, resume and coast, said acceleration error is a difference between an actual acceleration and a desired acceleration.

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- 38. The method of claim 35, wherein when said cruise control mode is one of a group comprising tap-up and tap-down, said acceleration error is based on a timed value of a difference between an actual acceleration and a desired acceleration.
- 39. The method of claim 28, further comprising determining whether an enable is flagged, wherein said closed-loop speed compensation factor is equal to a prior closed-loop speed compensation factor when said enable is not flagged.